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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/500,315

06/28/2004

Shichao Ge

4582-008

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11/29/2006

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EXAMINER

REHM, ADAM C

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/500,315 | Applicant(s) GE, SHICHAO | |
| | Examiner Adam C. Rehm | Art Unit 2875 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2004 and 15 September 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the base mounted directly on a CB per at least Claim 1 must be shown and the single heat dispersing gyroidal flange per Claim 14 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 7 is objected to because of the following informalities: typographical error "a LED axis" is incorrect. Appropriate correction is required.
3. Claim 13 is objected to because of the following informalities: "the heat sink" lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitation "the base is mounted directly on a circuit board" in Line 4 and then recites the limitation "wherein circuit boards are provided on or around the base" in Line 10. Limitations within the same claim cannot contradict each other unless recited in the alternative, e.g. separated by "or" language. If Applicant is claiming additional circuit boards, i.e. a base mounted on a CB and a second CB provided around the base, the language is new matter. In sum, is it not possible for the CB to be both under and on or under and around the base.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 4, 6, 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's admitted prior art, which discloses an LED comprising:

- At least one LED chip (101, Fig. 1) directly mounted on a metal base of high heat conductivity (103, Fig. 1);
- Wherein the base is mounted directly on a CB (106 and electrical conduction layer thereof 107, Fig. 1);
- Wherein the LED chip is electrically connected to an applied power supply/driving circuit through the CB (107) via outgoing LED leads (105);
- Wherein the LED has a transparent medium layer/bulb housing/optical glue and lens disposed thereon (108/109);
- Wherein the CBs are provided on or around the base (as best understood by Examiner, Applicant intends to claim a CB situated under the base; Fig. 1 illustrates such as provided above; see 112);
- A light reflector at front of the LED chip (102);
- Wherein an angle between the reflective surface and an LED axis is from 10 to 70 degrees (Fig. 1 illustrates a prior art device having a reflector with an angle relative to an LED axis that is substantially similar to Applicant's claimed invention illustrated in Fig. 2, i.e. approximately 45 degrees); and

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- Wherein the heat sink has heat-dispersing flanges on it (113, Fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (AAPA) in view of WORGAN (US 2002/0071275). While AAPA substantially discloses the claimed invention including an LED chip with base and CB mounted on a heat sink with flanges (as provided above), the AAPA does not disclose use of a screw to connect the elements. However, utilizing screws to attach elements together is notoriously known in the art and WORGAN teaches the use of fixing screws (18) to secure the LED and PCB to the chassis/heat sink (Paragraph 34; Fig. 3). It would have been obvious to one of ordinary skill in the art at the time of invention to modify AAPA and use the screws as taught by WORGAN in order to secure elements together.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA. While AAPA substantially discloses the claimed invention including an LED chip (as provided above), undisclosed is a plurality of LED chips of the same or different color. However, it has been held that mere duplication of the

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essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Given that it is well known that an increase in the number of light sources will increase overall light output, it would have been obvious to one having ordinary skill in the art to duplicate the existing light source/LED of AAPA in order to provide a plurality of LEDs of the same color for increase light output.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and WORGAN ET AL. (US 6,568,833) in view of BEGEMANN (US 6,220,722). AAPA and WORGMAN substantially disclose the claimed invention, but do not disclose a screw lamp head electrical connection means. However, BEGEMANN teaches an LED lamp with threaded base (Fig. 2) for the purpose of electrical connection (fig. 2). It would have been obvious to one of ordinary skill in the art at the time of invention to modify AAPA and WORGAN and use the threaded base as taught by BEGEMANN in order to provide a common and readily available electrical connection.

9. Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and WORGAN ET AL. (US 6,568,833) in view of LOWERY (US 6,504,301). AAPA and WORGMAN substantially disclose the claimed invention, but do not disclose an LED having a light-converting member between the optical glue and lens or coated on an inner lens/bulb housing. However, LOWERY teaches an LED device utilizing a light-converting fluorescent member (52) for the purpose of converting light (Column 6, Lines 6-32). Further, LOWERY teaches positioning the material between the lens (54)

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and LED (44, Fig. 2). Given the teachings of AAPA in addition to LOWERY, it would have been obvious to one of ordinary skill in the art at the time of invention to modify AAPA and WORGAN and use the material as taught by LOWERY and situated within AAPA in order to convert light as desired.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and WORGAN ET AL. (US 6,568,833). AAPA and WORGMAN substantially disclose the claimed invention including a lamp housing (as provided above), but do not disclose a housing made of glass or plastic. While it is likely that the AAPA transparent housing is made of either glass or plastic given that such materials are notoriously known in the art, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416.

Moreover, Applicant seems to arbitrarily list different materials since Applicant has not disclosed that the use of glass or plastic solves any stated problems or is for any particular purpose and it appears that the invention would perform equally well with the housing of AAPA.

11. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and WORGAN ET AL. (US 6,568,833) in view of SAGAL ET AL. (US 6,827,470). AAPA and WORGMAN substantially disclose the claimed invention including a heat sink having heat-dispersing flanges (as provided above), but do not disclose a plurality of flanges in a gyroidal configuration or where the inner surface of the heat sink is a parabolic, light reflection surface. However, SAGAL teaches a lamp with heat-dispersing gyroidal flanges (24, Fig. 1) on a heat sink

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having an inner parabolic surface for light reflection and dispersing heat (Column 4, Lines 36-55). It would have been obvious to one of ordinary skill in the art at the time of invention to modify AAPA and WORGAN and use the flanges and reflector as taught by SAGAL in order to dissipate heat and reflect light.

12. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and WORGAN ET AL. (US 6,568,833) in view of MOORE (US 3,936,686). While AAPA and WORGAN substantially disclose the claimed invention, they do not disclose a parabolic, reflective heat sink. However, MOORE teaches a parabolic reflective heat sink for dissipating heat and reflecting light (Column 6, Lines 3-12). It would have been obvious to one of ordinary skill in the art at the time of invention to modify AAPA and WORGAN and use the heat sink as taught by MOORE in order to obtain the benefits thereof, i.e. reflecting light while dissipating heat.

Response to Amendment

13. Applicant's amendment dated 9/15/2006 has been received.

14. The drawing objection and 112 are withdrawn. However, after further review, additional drawing objections and a 112 rejection are made.

Response to Arguments

15. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

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See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

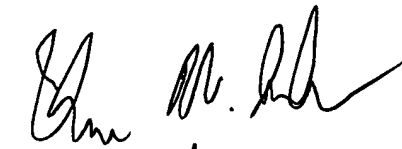
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam C. Rehm whose telephone number is 571.272.8589. The examiner can normally be reached on M-F 9-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571.272.2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ACR
11/22/2006


Thomas M. Sembar
Primary Examiner